



# INDIAN SCHOOL MUSCAT



## CLASS XI

### INFORMATION TECHNOLOGY(802)

### Chapter - 2 : Networking and Internet

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# Some points to keep in mind.....



- Please avoid login from multiple systems.
- Kindly logout at the end of the session.
- Please turn off your mic and webcam
- If you have any doubt, write in the chat box
- If there is any technical problem, hold on – we will be back
- Since it is a lockdown situation you can use rough notebook or notepad or sheets of paper to take down notes. You may take screenshots during the course of delivery of topics.



# Star Topology



In star topology, all the devices are connected to the central controller called hub.

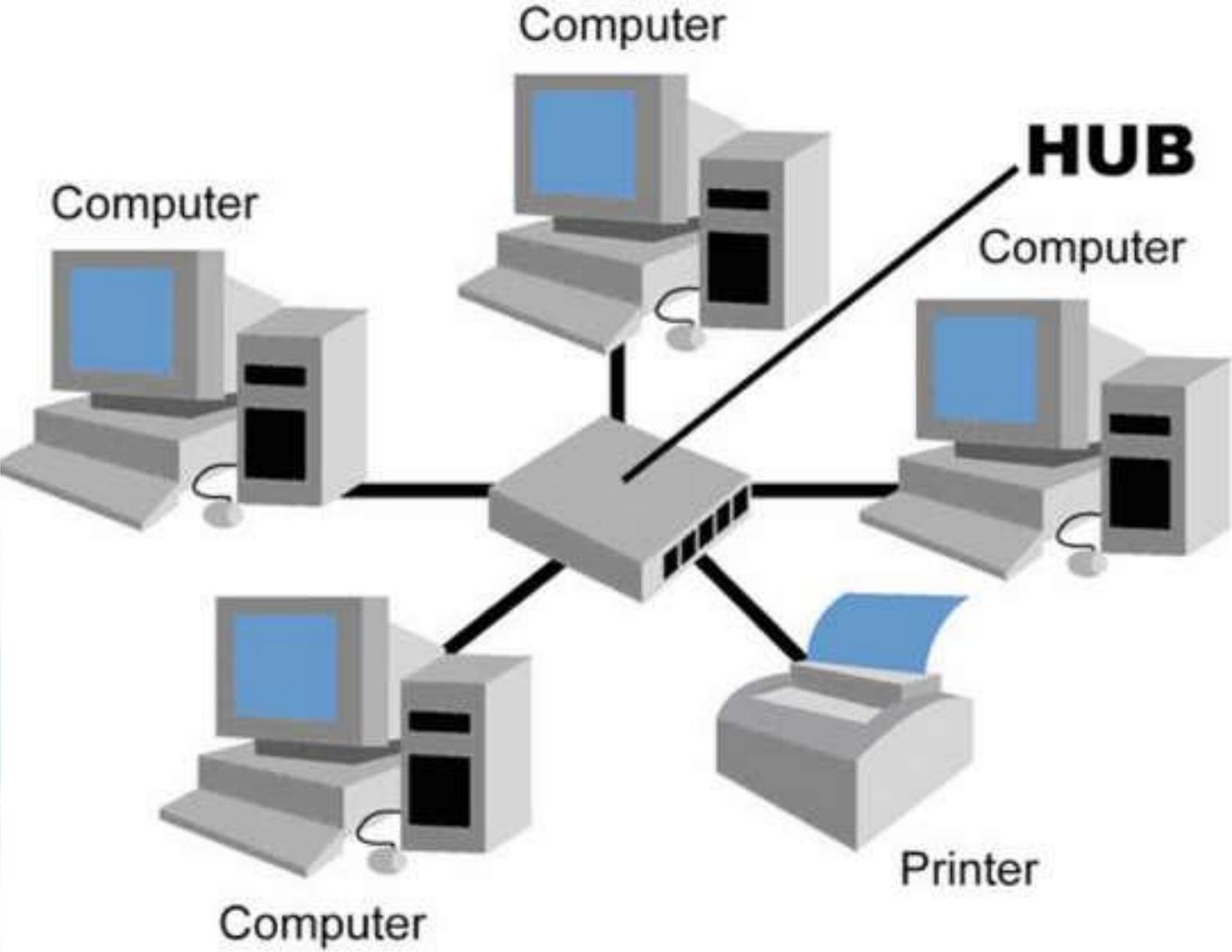
Communication between any two devices takes place through the hub responsible for relaying messages.

Star network can be easily installed and configured.

Also, fault detection and isolation is easy.

However, it requires more cabling as compared to bus and ring topology. Also, hub failure will lead to network failure.

# Star Topology





# Mesh Topology



In mesh topology, every node is connected with every other node in the network.

Because of dedicated point to point connection between every possible pair of nodes, the topology provides secure data transfer without any traffic problem. It requires a large number of connections establish the topology. This leads to difficulty in installation as the number of nodes grow as the network grows.



# Mesh Topology





# Tree Topology



Tree topology is a hybrid topology using combination of star and bus topology. Backbone cable in a bus topology acts like the stem of the tree, and star networks (and even individual nodes) are connected to the main backbone cable like the branches of tree. Damage to a segment of a network laid using tree topology will not affect other segments.



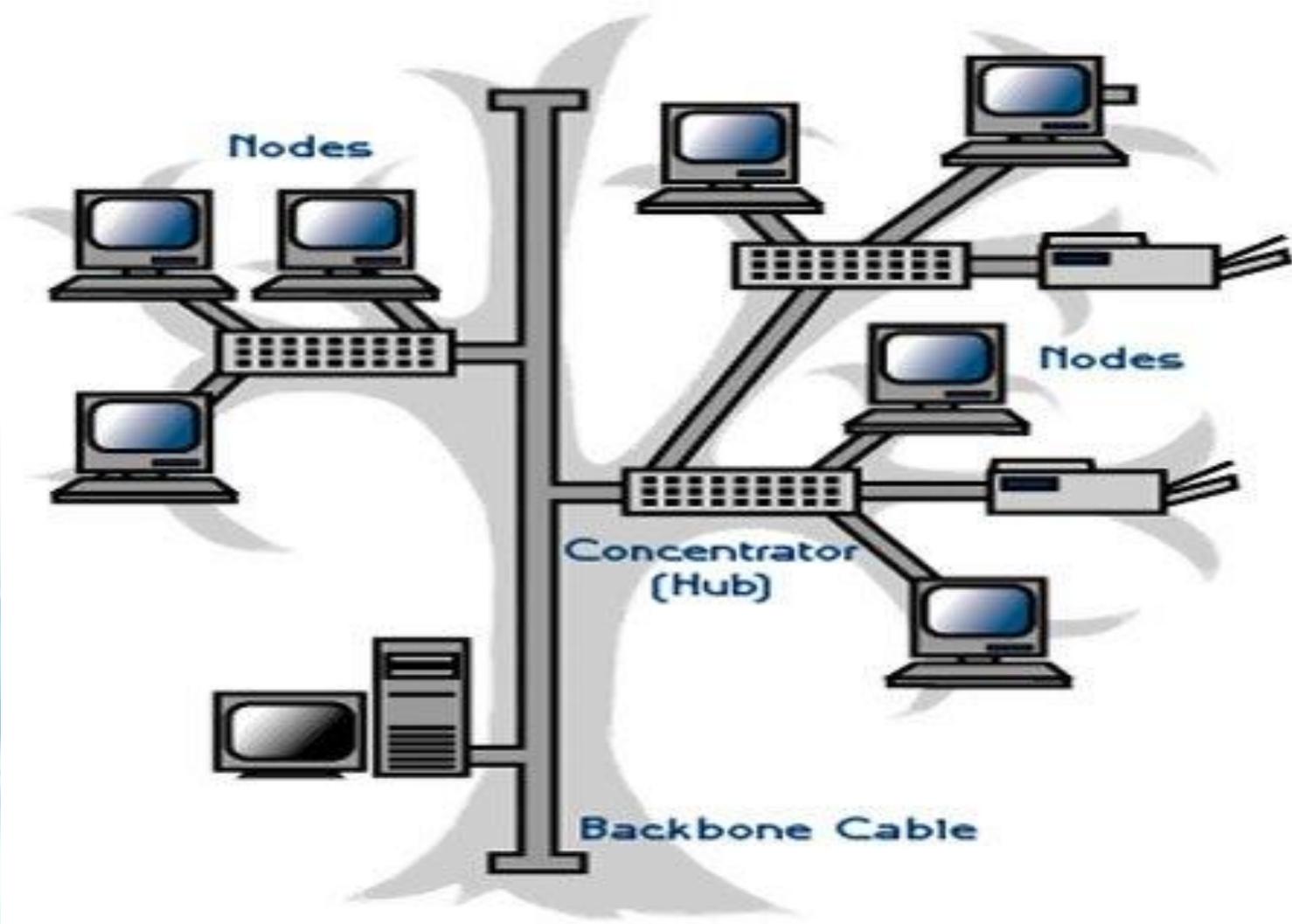
# Tree Topology continued...



Installation and configuration is difficult as compared to other topologies. Also, if the backbone cable is damaged, the entire network communication is disrupted.

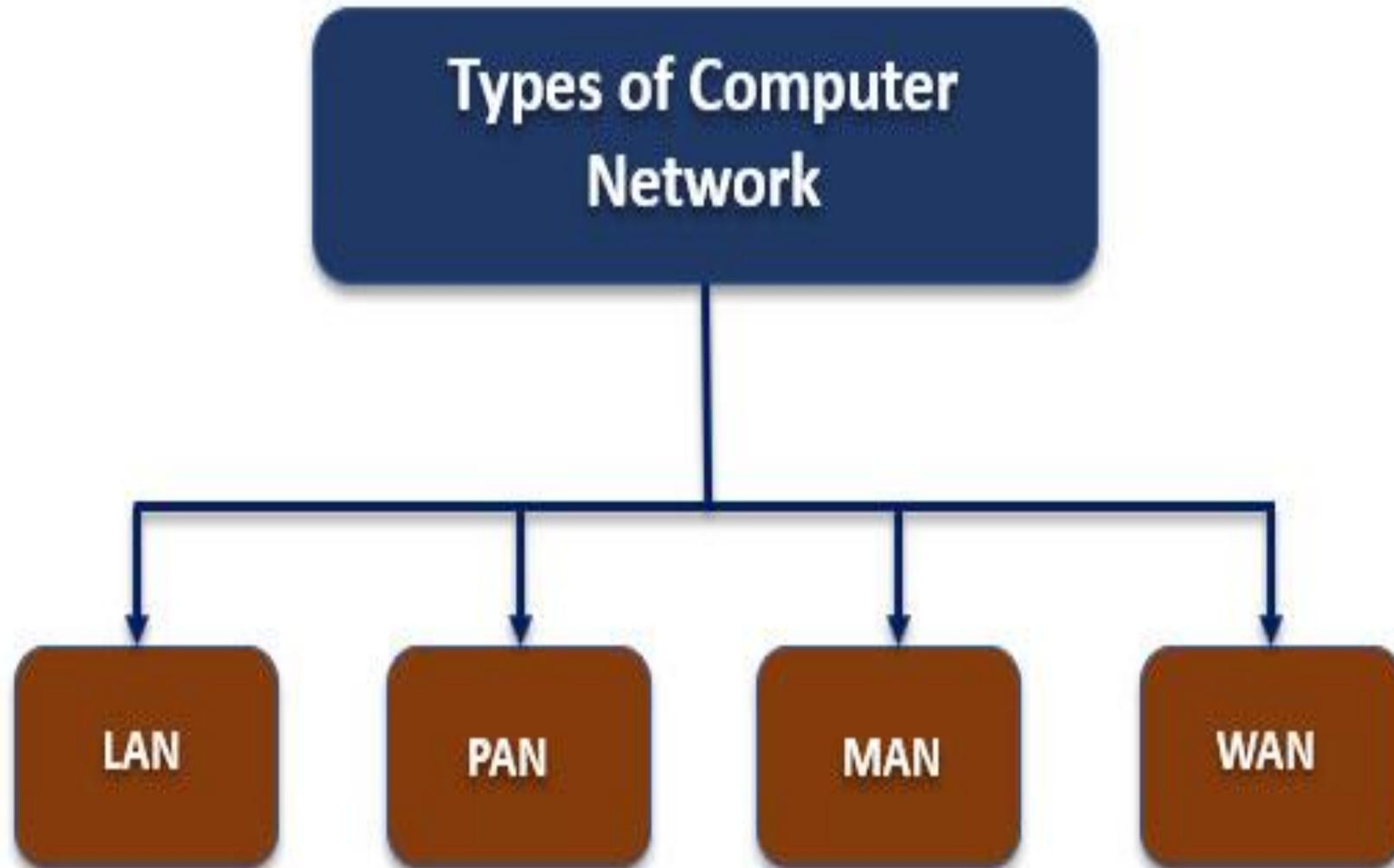


# Tree Topology





On the basis of geographical span, network can be broadly categorized as LAN, PAN, MAN & WAN.



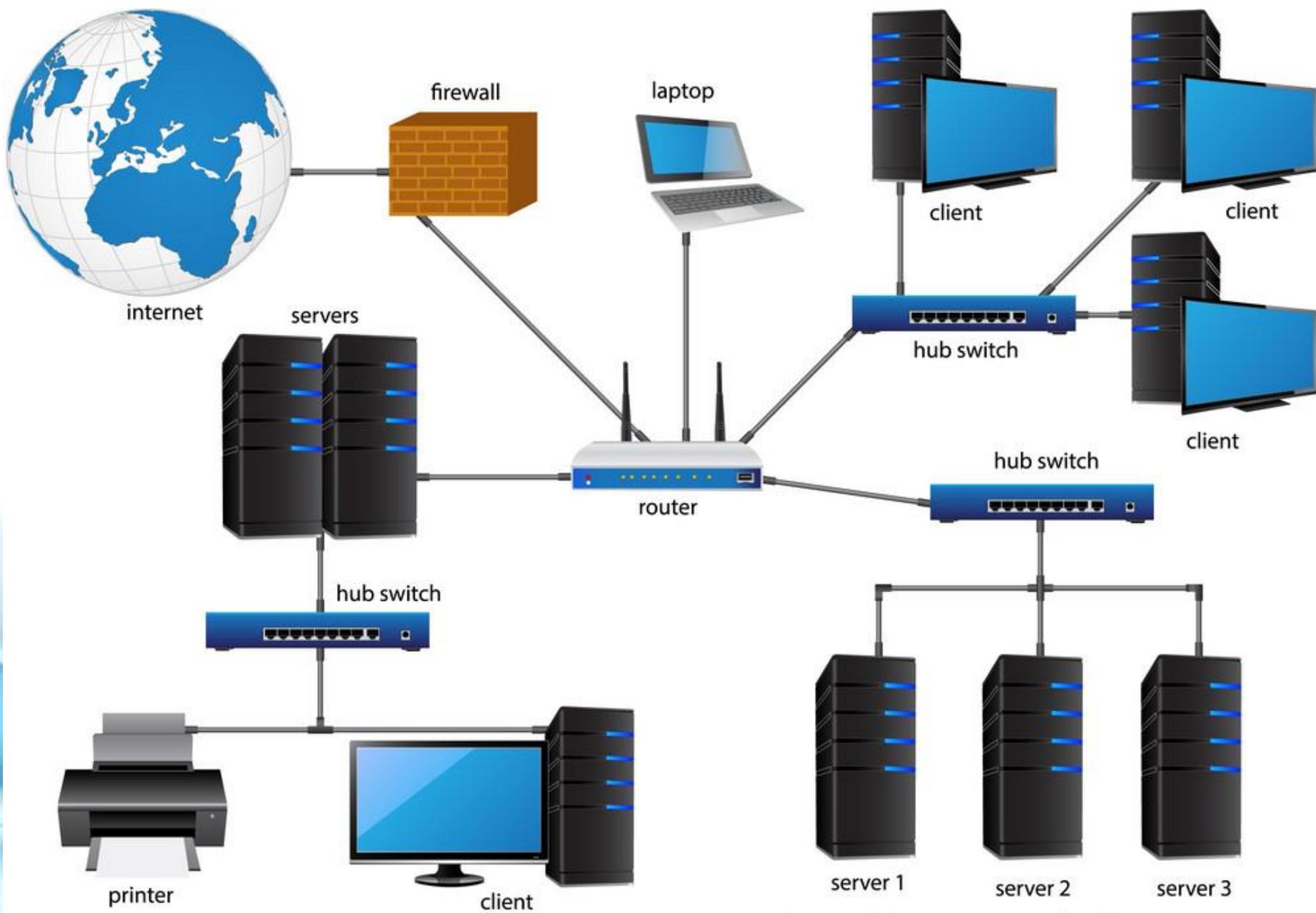


# LAN (Local Area Network)



**LAN** stands for **Local Area Network**. Local Area networks are private networks and can span a radius of up to 1 Km.

They are generally established within a building or campus. **LANs** operate at a speed in the range 10 Mbps to 1 Gbps.



# Local Area Network(LAN)



# PAN (Personal Area Network)



A personal area **network (PAN)** is a **computer network** for interconnecting electronic devices centered on an individual person's workspace.

A **PAN** provides data transmission among devices such as **computers**, smartphones, tablets and personal digital assistants.



# PAN (Personal Area Network)





## MAN (Metropolitan Area Network)



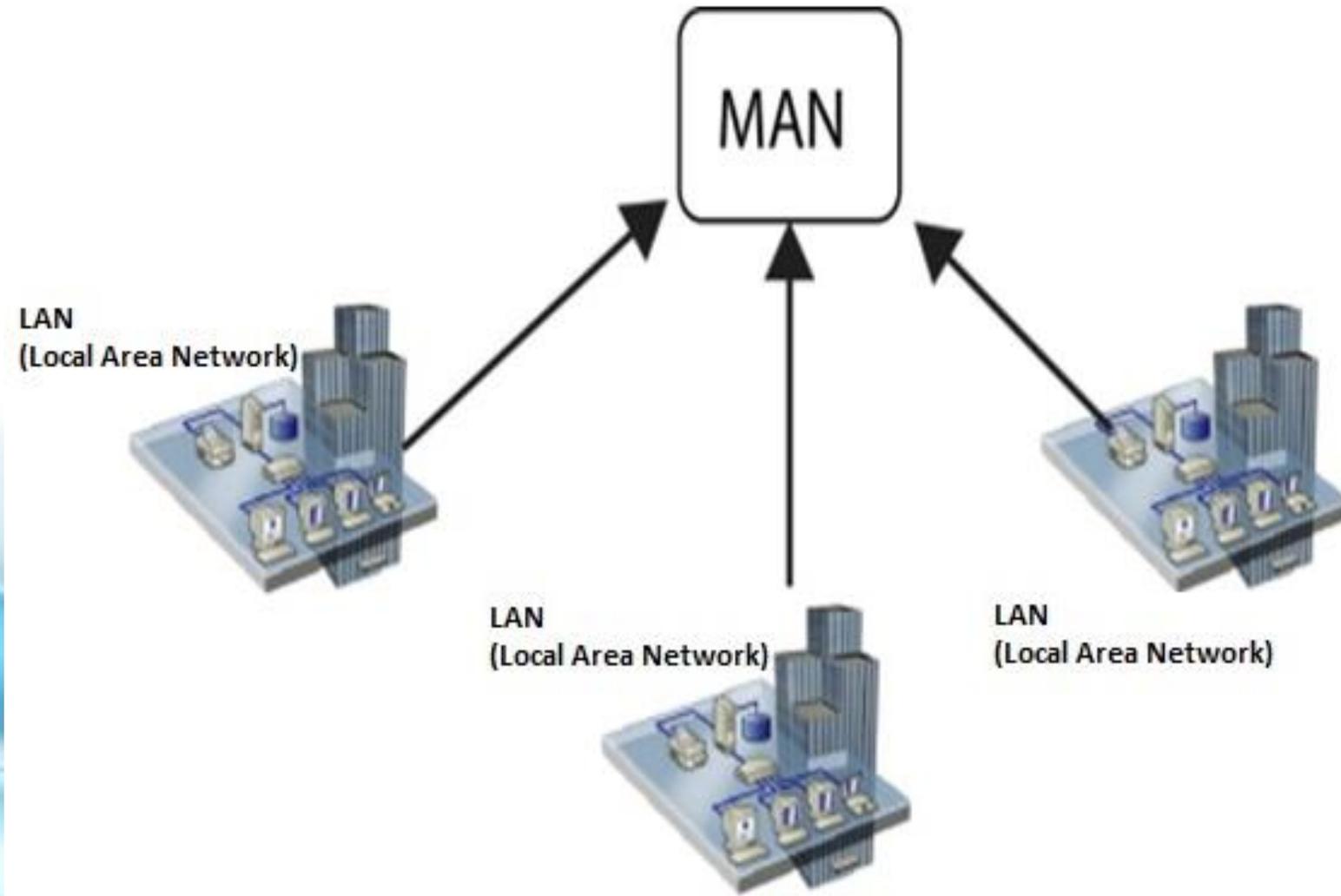
**MAN** stands for **Metropolitan Area Network**. It may be owned by a single organization or by many individuals or organizations.

These networks are used to establish link within a city, and span an area of radius up to 50 Km. **MANs** facilitate sharing of resources by connecting various local area networks.

For example, a cable television network within a city.



# MAN (Metropolitan Area Network)





## WAN (Wide Area Network)



**WAN** stands for **Wide Area Network**. Typically a **WAN** spans a segment of about 1000 Km.

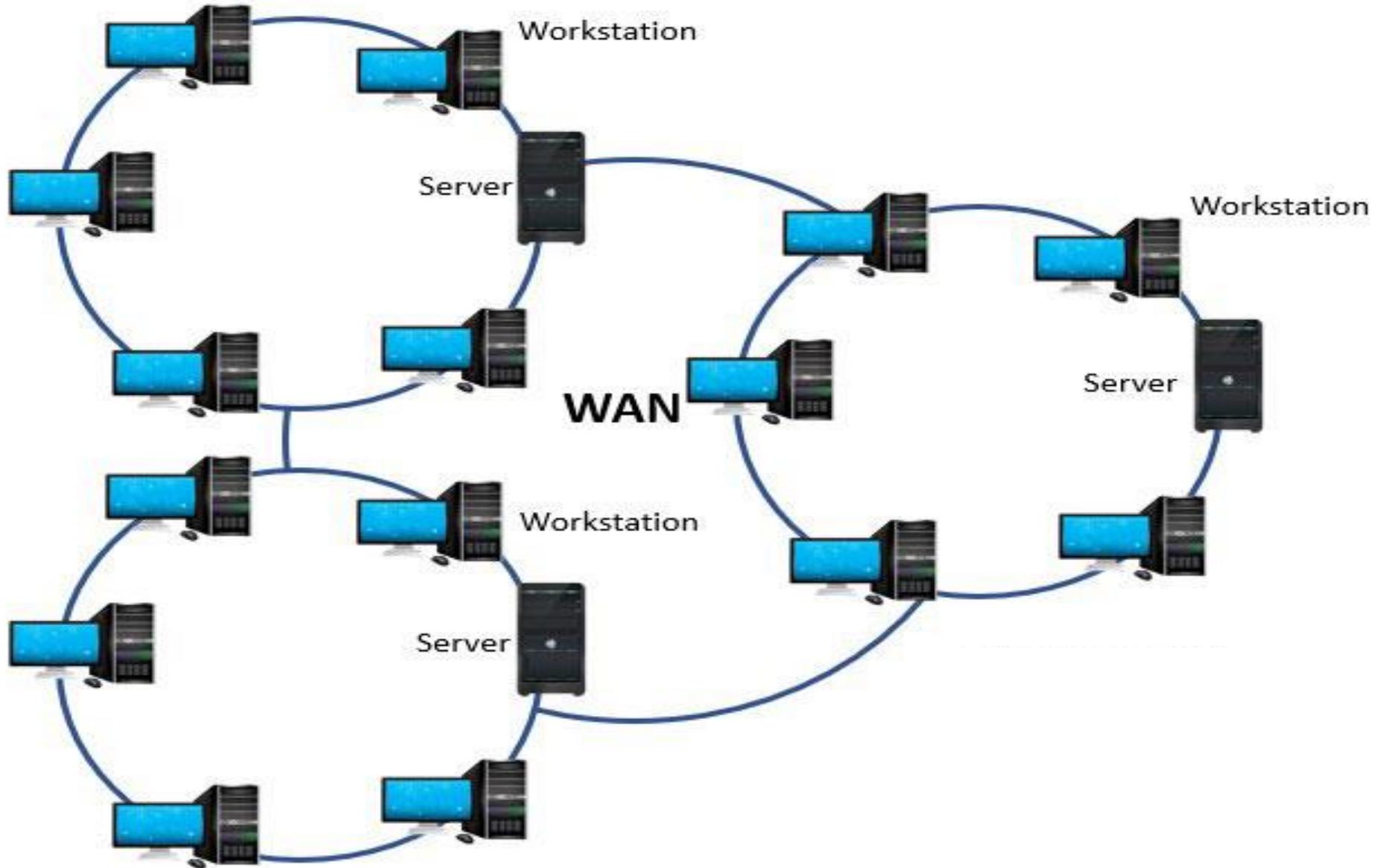
They are used for long distance communication and are well suited for connecting remote areas.

They establish link within a country or continent.

A **WAN** may be owned and managed by several organizations. It connects various local and metropolitan area networks.



# WAN (Wide Area Network)





**Any Questions?**